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EXAMINER

REDDIVALAM, SRINIVASA R

ART UNIT	PAPER NUMBER
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2477

NOTIFICATION DATE	DELIVERY MODE
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03/26/2010

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

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Office Action Summary	Application No. 10/588,741	Applicant(s) CHEN, XIAOBAO	
	Examiner SRINIVASA R. REDDIVALAM	Art Unit 2477	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 August 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-25 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 04 August 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>04/30/2009</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Objections

1. Claims 1, 7, 10, 14, and 22-25 are objected to because of the following informalities:
 2. In claims 1, 10, 14 and 22-25, there is no clear distinction between the preamble and the body containing the limitations in the claims.
 3. The dependency of the claim 7 needs to be changed from claim 2 to claim 3 as the words 'care-of address' lack antecedent basis. Appropriate correction is required.

Claim Rejections - 35 USC § 101

4. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims **22, 23, 24 and 25** are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

For claims **22, 23 and 25**, computer readable medium comprising instructions is non-statutory because the specification at page 11 (see under Implementation details) teaches that the computer programs may be stored on carriers, including without limitation non-volatile storage media such as removable discs, flash memory, and *electrical or electromagnetic signals* which is non-statutory. Examiner recommends that applicant amends the claims to identify the statutory embodiment by writing that the computer readable medium is non-transitory.

For claim **24** which recites an apparatus and the specification says (see page 11, under Implementation details) that the apparatus can be software and hence is non-statutory.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

6. Claims 1-3, 9, 14-16, 18-21, 22, 24 and 25 are rejected under 35 U.S.C. 102(a) as being anticipated by Soliman et al. ("Hierarchical Mobile IPv6 mobility management (HMIPv6)", June, 2003).

Regarding claim 1, Soliman et al. teach a method (see Abstract and Fig.1 on page 11) of operating a network entity (see page 11, Fig.1, block *MAP* for a network entity) at an intermediate node (see AR1/AR2 in Fig.1 and page 11, lines 13-15) between a mobile node in a foreign network (see MN in Fig.1 and page 11, lines 7-8) and a correspondent node (see CN in Fig.1), the method comprising sending a packet, addressed to the correspondent node, from the network entity (see Fig.1 and page 21, 3rd para wherein the registration of the mobile node with MAP/network entity is mentioned and also sending a BU packet that contains binding between the Home Address and RCoA to the correspondent node is mentioned).

Regarding claim 2, Soliman et al. further teach the method of claim 1, wherein the packet is a binding update (see page 21, 3rd para wherein sending a **BU** packet that contains binding between the Home Address and RCoA to the correspondent node is mentioned).

Regarding claim 3, Soliman et al. further teach the method of claim 2, further comprising allocating to the mobile node a care-of address within the foreign network, wherein the binding update comprises an indication of the care-of address (see page 11, Fig.1 and page 19, under section 6 i.e. Protocol Operation wherein forming/allocating RCoA/care-of address to the mobile node on the MAP's link is mentioned and also see page 21, 3rd para wherein a **BU** packet that contains binding between the Home Address and RCoA is mentioned).

Regarding claim 9, Soliman et al. further teach the method of claim 1, wherein the packet is a session packet in a session between the mobile node and the correspondent node (see page 23, section 6.1.1).

Regarding claim 14, Soliman et al. teach a method (see Abstract and Fig.1 on page 11) of operating a network entity (see page 11, Fig.1, block *MAP* for a network entity) at a node (see AR1/AR2 in Fig.1 for a node and page 11, lines 13-15) of a packet-switched data network, wherein the network entity acts an intermediate node between a mobile node (see MN in Fig.1 and page 11, lines 7-8) having a care-of address in a foreign network (see page 19-21 *under section 6.1*, lines 1-4 wherein the mobile node having an on-link CoA in a new MAP domain/foreign network is mentioned) and a correspondent node (see CN in Fig.1), the method comprising allocating a secondary care-of address corresponding uniquely to a home address of the mobile node (see page 21, 3rd para, lines 1-3 wherein the registration of the mobile node with the MAP with its new RCoA/secondary care-of address with its HA by sending a BU that specifies the binding i.e. RCoA & Home Address is mentioned).

Art Unit: 2477

Regarding claim 15, Soliman et al. further teach the method of claim 14, further comprising sending a binding update indicating the secondary care-of address to the correspondent node (see page 21, 3rd para wherein sending a BU i.e. binding update that specifies the binding between the Home Address and the RCoA/secondary care-of address to the correspondent node is mentioned).

Regarding claim 16, Soliman et al. further teach the method of claim 14, including sending a binding update indicating the secondary care-of address to an HA in a HN of the mobile node (see page 21, 4th para wherein binding the RCoA/secondary care-of address with the HA in a HN of the mobile node is also mentioned).

Regarding claim 18, Soliman et al. further teach the method according to claim 1, wherein the network entity is located at a gateway to the foreign network (see page 11, lines 13-15 wherein the implementation of MAP/network entity in AR1/AR2/gateway to the foreign network is mentioned).

Regarding claim 19, Soliman et al. further teach the method according to claim 18, further comprising configuring the network entity as the default gateway of the mobile node (see page 11, lines 13-15 wherein the implementation of MAP/network entity in AR1/AR2/gateway of the mobile node is mentioned).

Regarding claim 20, Soliman et al. further teach the method according to claim 1, further comprising configuring the network entity as the first hop of the mobile node (see page 11, lines 15-16 wherein the mobile node choosing the first hop MAP is mentioned).

Regarding claim 21, Soliman et al. further teach the method according to claim 1,

Art Unit: 2477

wherein the network entity and the mobile node are configured to use MIPv6 protocols (see page 9, under section 2, 5th para lines 1-6).

Regarding claim 22, Soliman et al. teach a computer readable medium comprising instructions which, when executed, cause the method of claim 1 to be performed (see page 25 under section 6.2 wherein MAP with its binding cache for storing messages and MAP operations using computer instructions/messages are mentioned and refer to the explanation by Soliman et al. of claim 1 above for performing the method).

Regarding claim 24, Soliman et al. teach an apparatus (see page 11, Fig.1) arranged to perform the method of claim 1 (refer to the explanation by Soliman et al. of claim 1 above for performing the method).

Regarding claim 25, Soliman et al. teach a computer readable medium comprising instructions which, when executed, cause the method of claim 14 to be performed (see page 25 under section 6.2 wherein MAP with its binding cache for storing messages and MAP operations using computer instructions/messages are mentioned and refer to the explanation by Soliman et al. of claim 14 above for performing the method).

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Art Unit: 2477

8. Claims 4, 6, 10, 11, 13, 17 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Soliman et al. ("Hierarchical Mobile IPv6 mobility management (HMIPv6)", June, 2003) in view of Aura (US Pub No: 2005/0041634 A1).

Regarding claim 4, Soliman et al. teach the method of claim 3.

Soliman et al. further teach the method of claim 3, wherein the network entity receives in a session between the correspondent node and the mobile node one or more session packets and forwards the session packets to the mobile node (see page 23, lines 3-6 wherein the MAP/network entity receiving packets from correspondent node and forwarding to the mobile node is mentioned).

Soliman et al. do not teach specifically the method comprising receiving the packets in a session between the correspondent node and the mobile node, with the correspondent node address as the source address and the care-of address as the destination address.

However, Aura teaches a method comprising receiving the packets in a session between the correspondent node and the mobile node, with the correspondent node address as the source address and the care-of address as the destination address (see page 2, para [0026]).

Art Unit: 2477

Therefore, it would have been obvious to one of ordinary skills in the art at the time of invention to modify the method of Soliman et al. to include receiving the packets in a session between the correspondent node and the mobile node, with the correspondent node address as the source address and the care-of address as the destination address, disclosed by Aura to provide adequate address security of mobile nodes in mobile IPv6 networking system.

Regarding claim 6, Soliman et al. together with Aura teach the method of claim 4.

Aura further *teaches* the method of claim 4, wherein the network entity translates the destination address of the session packets to a home address of the mobile node prior to forwarding the session packets to the mobile node (see pages 2-3, para [0026] wherein a routing header (RH) type 1 in each of the packets containing the mobile node's HoA/home_address is mentioned).

Regarding claim 10, Soliman et al. a method (see Abstract and Fig.1 on page 11) of operating a network entity (see page 11, Fig.1, block *MAP* for a network entity) at an intermediate node (see AR1/AR2 in Fig.1 and page 11, lines 13-15) between a mobile node in a foreign network (see MN in Fig.1 and page 11, lines 7-8) and a correspondent node (see page 11, CN in Fig.1), the method comprising receiving from the correspondent node a packet addressed to the network entity (see page 23, lines 3-4 wherein the MAP/network entity receiving packets from the correspondent node is mentioned).

Art Unit: 2477

Soliman et al. do not teach specifically the method comprising having a correspondent node address as the source address in the packet receiving from the correspondent node.

However, Aura teaches a method comprising having a correspondent node address as the source address in the packet receiving from the correspondent node (see pages 2-3, para [0026]).

Therefore, it would have been obvious to one of ordinary skills in the art at the time of invention to modify the method of Soliman et al. to include a correspondent node address as the source address in the packet receiving from the correspondent node, disclosed by Aura to provide adequate address security of mobile nodes in mobile IPv6 networking system.

Regarding claim 11, Soliman et al. and Aura together teach the method of claim 10.

Soliman et al. further teaches the method wherein the packet is a session packet in a session between the correspondent node and the mobile node, and the network entity forwards the session packet to the mobile node (see page 23, lines 4-6).

Regarding claim 13, Soliman et al. and Aura together teach the method of claim 11.

Aura further teaches the method wherein the network entity translates the destination address of the session packet to a home address of the mobile node prior to forwarding the session packet to the mobile node (see pages 2-3, para [0026] wherein a routing

Art Unit: 2477

header (RH) type 1 in each of the packets containing the mobile node's HoA/home_address is mentioned).

Regarding claim 17, Soliman et al. further *teach* the method of claim 14, comprising one or more session packets received from the correspondent node in a session between the correspondent node and the mobile node and forwarding the one or more session packets to the mobile node (see page 23, lines 3-6 wherein the MAP/network entity receiving packets from correspondent node and forwarding to the mobile node is mentioned).

Soliman et al. do not teach specifically the method of claim 14, further comprising translating the destination address of one or more session packets, received from the correspondent node in a session between the correspondent node and the mobile node, from the secondary care-of address to the home address prior to forwarding the one or more session packets to the mobile node.

However, Aura *teaches* a method comprising translating the destination address of one or more session packets to a home address of the mobile node prior to forwarding the one or more session packets to the mobile node (see pages 2-3, para [0026] wherein a routing header (RH) type 1 in each of the packets containing the mobile node's HoA/home_address is mentioned).

Therefore, it would have been obvious to one of ordinary skills in the art at the time of

Art Unit: 2477

invention to modify the method of Soliman et al. to include translating the destination address of one or more session packets to a home address of the mobile node prior to forwarding the one or more session packets to the mobile node, disclosed by Aura to provide adequate address security of mobile nodes in mobile IPv6 networking system.

Regarding claim 23, Soliman et al. teach a computer readable medium comprising instructions which, when executed, cause the method of claim 10 to be performed (see page 25 under section 6.2 wherein MAP with its binding cache for storing messages and MAP operations using computer instructions/messages are mentioned and refer to the explanation by Soliman et al. and Aura of claim 10 above for performing the method).

9. Claims 5, 7-8 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Soliman et al. ("Hierarchical Mobile IPv6 mobility management (HMIPv6)", June, 2003) in view of Aura (US Pub No: 2005/0041634 A1) and further in view of Jung (US Pub. No: 2002/0015396 A1).

Regarding claim 5, Soliman et al. together with Aura teach the method of claim 4. Soliman et al. and Aura together yet do not teach the method wherein the session packets are tunneled from the correspondent node to the network entity and decapsulated prior to being forwarding to the mobile node.

However, Jung teaches a method wherein the session packets are tunneled from the correspondent node to the network entity and decapsulated prior to being forwarding to

Art Unit: 2477

the mobile node (see page 2, para [0017] wherein the correspondent node transmitting data packet encapsulated with a tunneling IP header to a foreign agent/network entity and the foreign agent/network entity decapsulating the data packet & forwarding the decapsulated data packet to the mobile node are mentioned).

Therefore, it would have been obvious to one of ordinary skills in the art at the time of invention to modify the method of Soliman et al. and Aura to have the session packets tunneled from the correspondent node to the network entity and decapsulated prior to being forwarding to the mobile node, disclosed by Jung to provide efficient exchange of data packets between mobile node and correspondent node through forward and reverse tunneling in the system.

Regarding claim 7, Soliman et al. teach the method of 2/3.

Soliman et al. further teach the method wherein the network entity sends, in a session between the mobile node and the correspondent node, one or more session packets (see page 23, section 6.1.1).

Soliman et al. do not teach specifically the method comprising sending in a session between the mobile node and the correspondent node, one or more session packets with the care-of address as the source address and the correspondent node address as the destination address.

Art Unit: 2477

However, Aura teaches a method comprising sending in a session between the mobile node and the correspondent node, one or more session packets with the care-of address as the source address and the correspondent node address as the destination address (see page 2, para [0025]).

Therefore, it would have been obvious to one of ordinary skills in the art at the time of invention to modify the method of Soliman et al. to include sending one or more session packets in a session between the mobile node and the correspondent node, with the care-of address as the source address and the correspondent node address as the destination address, disclosed by Aura to provide adequate address security of mobile nodes in mobile IPv6 networking system.

Soliman et al. and Aura together yet do not teach specifically the above method wherein the network entity sending in a session between the mobile node and the correspondent node, one or more session packets *in a tunnel from the network entity to the correspondent node*.

However, Jung teaches a method wherein the network entity sends, in a session between the mobile node and the correspondent node, one or more session packets in a tunnel from the network entity to the correspondent node (see page 2, para [0017] wherein encapsulating the packets received from the mobile node in a foreign

Art Unit: 2477

agent/network entity *with a tunneling IP header for reverse tunneling* and transmitting the encapsulated packets to the correspondent node is mentioned).

Therefore, it would have been obvious to one of ordinary skills in the art at the time of invention to modify the method of Soliman et al. and Aura to have the network entity sending, in a session between the mobile node and the correspondent node, one or more session packets in a tunnel from the network entity to the correspondent node, disclosed by Jung to provide efficient exchange of data packets between mobile node and correspondent node through forward and reverse tunneling in the system.

Regarding claim 8, Aura further *teaches* the method, wherein the tunneled session packets have a home address of the mobile node as an inner source address (see page 2, para [0025] wherein the HoA/home address of the mobile node is mentioned as Home-address option which is equivalent to packets having a home address of the mobile node as an inner source address).

Regarding claim 12, Soliman et al. together with Aura teach the method of claim 11. Soliman et al. and Aura together yet do not teach the method wherein the session packet is tunneled from the correspondent node to the network entity and the network entity decapsulates the session packet prior to forwarding the decapsulated session packet to the mobile node.

However, Jung teaches a method wherein the session packet is tunneled from the correspondent node to the network entity and the network entity decapsulates the

Art Unit: 2477

session packet prior to forwarding the decapsulated session_packet to the mobile node (see page 2, para [0017] wherein the correspondent node transmitting data packet encapsulated with a tunneling IP header to a foreign agent/network entity and the foreign agent/network entity decapsulating the data packet & forwarding the decapsulated data packet to the mobile node are mentioned).

Therefore, it would have been obvious to one of ordinary skills in the art at the time of invention to modify the method of Soliman et al. and Aura to have the session packet tunneled from the correspondent node to the network entity and the network entity decapsulating the session packet prior to forwarding the decapsulated session_packet to the mobile node, disclosed by Jung to provide efficient exchange of data packets between mobile node and correspondent node through forward and reverse tunneling in the system.

Conclusion

10. **Examiner's Note:** Examiner has cited particular paragraphs or columns and line numbers in the references applied to the claims above for the convenience of the applicant. Although the specified citations are representative of the teachings of the art and are applied to specific limitations within the individual claim, other passages and figures may apply as well. It is respectfully requested from the applicant in preparing responses, to fully consider the references in entirety as potentially teaching all or part of the claimed invention, as well as the context of the passage as taught by the prior art or disclosed by the Examiner. In the case of amending the claimed invention, Applicant

Art Unit: 2477

is respectfully requested to indicate the portion(s) of the specification which dictate(s) the structure relied on for proper interpretation and also to verify and ascertain the metes and bounds of the claimed invention.

11. Any response to this office action should be faxed to (571) 273-8300 or mailed

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401 Dulany Street

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to SRINIVASA R. REDDIVALAM whose telephone number is (571)270-3524. The examiner can normally be reached on Mon-Fri 9:30 AM - 6:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chirag Shah can be reached on 571-272-3144. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2477

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Srini Reddivalam
03/19/2010

/Chirag G Shah/
Supervisory Patent Examiner, Art Unit 2477